



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,846	11/26/2003	Dean Foote	THAS122071	9688
26389 7590 06/26/2009 CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC 1420 FIFTH AVENUE SUITE 2800 SEATTLE, WA 98101-2347				
EXAMINER				
PATEL, VISHAL A				
ART UNIT		PAPER NUMBER		
3676				
MAIL DATE		DELIVERY MODE		
06/26/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* DEAN FOOTE CLAYTON DELBRIDGE and  
SCOTT DELBRIDGE

---

Appeal 2009-003201  
Application 10/723,846  
Technology Center 3600

---

Decided<sup>1</sup>: June 26, 2009

---

Before RICHARD E. SCHAFER, JAMESON LEE and SALLY C.  
MEDLEY, *Administrative Patent Judges*.

MEDLEY, *Administrative Patent Judge*.

DECISION ON APPEAL

---

<sup>1</sup> The two month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

A. STATEMENT OF THE CASE

Dean Foote, Scott Delbridge and Clayton Delbridge (“Foote”), the inventors and real parties in interest, seek review under 35 U.S.C. § 134(a) of a Final Rejection of claim 1. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

References Relied on by the Examiner

Walker	4,150,836	Apr. 24, 1979
Williamson	5,115,550	May 26, 1992

Rejections on Appeal

The Examiner rejected claim 1 under 35 U.S.C. § 102(b) as anticipated by Walker.

The Examiner rejected claim 1 under 35 U.S.C. § 102(b) as anticipated by Williamson.

The Invention

The invention relates to a sealing configuration for closure doors on pressure vessels. Spec. 1. Foote discloses, referring to Foote’s figure 2 reproduced below [numbers from figure 2 inserted], a seal configuration [10] including a body [12] having an opening [14] with inwardly tapered peripheral sidewalls [26] and a closure [16]. The closure [16] has an attachment portion [28] with a planar surface [29] from which projects an axially projecting stopper portion [30] that fits within the opening [14]. The stopper portion [30] has an endless peripheral seal groove [32] in which a peripheral seal [34] is positioned. A backing ring [36] is positioned in close fitting relation around the projecting stopper portion [30] between the seal groove [32] and the planar surface [29] of the attachment portion [28]. Spec. 3-4.

Foote's figure 2 is below:

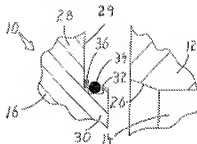


Figure 2 depicts a sealing configuration.

Claim 1, reproduced from the Claim Appendix of the Appeal Brief, reads as follows:

A seal configuration, comprising:

a body that contains internal pressure, the body having an opening with inwardly tapered peripheral sidewalls;

a closure that closes the opening, the closure serving as a door adapted to be opened and closed at will, the closure having an attachment portion larger than the opening with a planar surface from which projects an axially projecting stopper portion that fits closely within the opening, the stopper portion having an endless peripheral seal groove extending in spaced relation around the axis in which is positioned a peripheral seal that sealingly engages the tapered peripheral sidewalls of the body in interference fit relation, thereby conforming to the tapered peripheral sidewalls; and

a backing ring of pliable memory retaining material sheltered from internal pressure within the body by the peripheral seal and positioned in close fitting relation around the projecting stopper portion between the peripheral seal groove and the planar surface of the attachment portion of the closure, the backing ring engaging the tapered peripheral sidewall of the body in interference fit relation and conforming to the tapered peripheral sidewall while being sufficiently stiff as to resist extrusion flow under pressure, such that when the peripheral seal deforms in response to an increase in internal pressure within the body and extrusion gaps begin to form between the attachment portion of the closure and the body, the peripheral seal is extruded in an axial direction against the

backing ring, that portion of the backing ring engaging the tapered peripheral sidewall of the body plastically deforming by changing shape and applying sealing pressure at the extrusion gaps to prevent the peripheral seal from entering the extrusion gaps.

(App. Br. 14, Claims Appendix)

B. ISSUE

Has Foote shown that the Examiner incorrectly found that Walker describes (1) a closure with a planar surface from which projects an axially projecting stopper portion that fits closely within an opening; (2) a backing ring positioned in close fitting relation around the projecting stopper portion between a peripheral seal groove and the planar surface; and (3) a peripheral seal extruded in an axial direction against the backing ring?

C. FINDINGS OF FACT (“FF”)

1. Walker describes, referring to Walker’s figure 1 reproduced below [numbers from figure 1 inserted], a fitting [10] employing a seal system [12] including a threaded portion [14] at one end which is adapted to threadably engage a female boss. Col. 2, ll. 49-54.

Walker’s figure 1 is below:

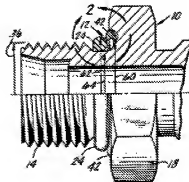


Figure 1 depicts a fitting and seal system.

2. Walker describes, referring to Walker's figure 2 reproduced below [numbers from figure 2B inserted], that the fitting [10] includes a thread relief [30] and a concentric cutout [28] that extends from the thread relief [30] by means of a smooth curve [32] to a frusto-conical portion [34] which extends generally radially outward just beyond the radius [36] (fig. 1) of the threaded portion [14] (fig 1) where it is faired by a smooth curved, semi-toroidal portion [38] into an inwardly facing cylindrically surfaced ring portion [40] that extends to the face [20] at an approximate right angle thereto. Col. 3, ll. 2-10.

Walker's figure 2 is below:

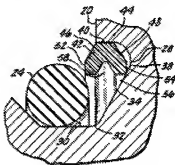


Figure 2 depicts a fitting and seal assembly.

3. An O-ring [24] is provided to form a leak tight seal. Col. 2, ll. 61-62.
4. Cutout [28] provides a pocket to retain a backup ring [42]. Col 3, ll. 10-11.
5. Walker depicts, in figure 2, the backup ring [42] having a side surface [54] that is in contact with frusto-conical portion [34] and positioned between the thread relief [30] and face [20].
6. Walker describes, referring to Walker's figure 3A reproduced below [numbers from figure 3A inserted], that when the fitting [10] is installed within the boss [16], the O-ring [24] is deformed to form a seal with the backup ring [42] blocking the O-ring [24] from access to

any gap [26] which might form between the boss [16] and the fitting [10]. Col. 3, ll. 46-50.

Walker's figure 3A is below:

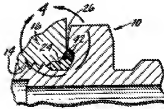


Figure 3A depicts the deformed seal assembly.

#### D. PRINCIPLES OF LAW

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

#### E. ANALYSIS

##### Anticipation by Walker

Claim 1 recites (disputed limitations in *italics*): “a closure . . . with a *planar surface from which projects an axially projecting stopper portion that fits closely within the opening. . .*” App. Br. Claim App’x. 14.

The Examiner finds that Walker describes a closure having a planar surface (i.e., face [20]) and an axially projecting stopper portion; identifying the stopper portion as the groove to retain the O-ring [24] and the surface that contacts the cylindrically surfaced ring portion [40]. Final Rejection 2; Ans. 3, 6. The Examiner further finds that the portion of the stopper having the groove fits within an opening in the boss [16]. Ans. 6. We understand the Examiner to find that Walker’s threaded portion [14], thread relief [30], and cutout [28] which includes smooth curve [32], frusto-conical portion [34], and the smooth curved semi-toroidal portion [38] that ultimately

contacts the cylindrically surfaced ring portion [40] which extends to the face [20] (i.e., planar surface) corresponds to the claimed axially projecting stopper portion.

Foote argues that Walker does not disclose a planar surface from which projects an axially projecting stopper portion that fits closely within the opening because Walker's surfaced ring portion [40] does not project axially such that it fits closely within the opening. App. Br. 9.

Foote's argument that Walker's surfaced ring portion [40] cannot correspond to the claimed stopper portion is misplaced. The Examiner does not find that the surfaced ring portion [40] alone corresponds to the stopper portion. Final Rejection 2; Ans. 3, 6. As explained immediately above, Walker describes the structure corresponding to the claimed stopper portion (i.e., threaded portion [14], thread relief [30], cutout [28] comprising smooth curve [32], frusto-conical portion [34] and semi-toroidal portion [38] that contacts the surfaced ring portion [40]). At least the threaded portion [14] of that structure closely fits within the opening in the boss [16]. The claim language does not require the *entire* stopper portion to fit closely within the opening.

Foote argues that Walker's threaded portion [14] or thread relief [30] can not be considered the claimed stopper portion because it does not extend from surface [20], but extends from cutout [28]. Reply Br. 4 (emphasis in Brief).

Again, Foote's argument is misplaced. The Examiner did not find that the threaded portion [14] or thread relief portion [30] alone corresponds to the stopper portion. Threaded portion [14] or thread relief portion [30] is just one part of the stopper portion. The stopper portion comprises the

threaded portion [14], thread relief [30], and cutout [28] comprising smooth curve [32], frusto-conical portion [34], and smooth curved semi-toroidal portion [38] that ultimately extends from the face [20] by way of the cylindrically surfaced ring portion [40]. The claim 1 language requires “*a planar surface from which projects an axially projecting stopper portion.*” The claim language does not require the entire stopper portion to project axially. Nor does the claim language require the portion that projects axially to be up against or physically connected to the planar surface. If a portion of the stopper portion projects axially, the claim language is satisfied. Because a portion of the stopper portion (i.e., threaded portion [14] or thread relief portion [30]) projects axially from the planar surface [20], the claim language is met.

Claim 1 further recites (disputed limitations in *italics*): “*a backing ring . . . positioned in close fitting relation around the projecting stopper portion between the peripheral seal groove and the planar surface . . .*” App. Br. Claim App’x. 14.

The Examiner finds that Walker describes a backup ring [42] in close fitting relation with the structure corresponding to the claimed stopper portion. Final Rejection 3; Ans. 2-3; 6. The Examiner further finds that Walker’s backup ring [42] has a lip [54] (i.e., side surface) that contacts the frusto-conical portion [34] of the structure corresponding to the claimed stopper portion and is thereby in close fitting relation around the corresponding stopper portion structure between the peripheral groove having O-ring [24] (i.e., peripheral seal groove) and the face [20] (i.e., planar surface). Ans. 7.

Foote argues that Walker does not describe the disputed limitations. Br. 9; Reply Br. 5. Specifically, Foote argues that although Walker's backup ring may be in close fitting relation with a portion of cutout [28], it is not in close fitting relation with a projecting stopper portion. Reply Br. 5.

Foote's argument is again misplaced. Foote's argument is premised on the notion that Walker's structure corresponding to the claimed projecting stopper portion is a distinct element from Walker's cutout [28]. We have already explained why that argument misapprehends the Examiner's position and findings. The Examiner finds that Walker's backup ring [42] is positioned in close fitting relation around the structure corresponding to the claimed stopper portion (i.e., threaded portion [14], thread relief [30], cutout [28] comprising smooth curve [32], frusto-conical portion [34] and semi-toroidal portion [38]) between the peripheral groove having O-ring [24] (i.e., peripheral seal groove) and face [20] (i.e., planar surface). Ans. 7. The Examiner's findings in this respect are reasonable and Foote has not shown that they are not.

Foote further argues that the claimed seal groove limitation can not be met by just Walker's thread relief [30] (i.e., the peripheral groove having O-ring [24]). Reply Br. 5. Foote argues that Walker's cutout [28] must form part, if not all, of the structure corresponding to the claimed seal groove since it is formed like a groove and acts like a groove by receiving and retaining the seals. Reply Br. 5. Foote further argues that Walker's backup ring [42] cannot be positioned between the structures corresponding to the claimed seal groove and planar surface because it is positioned within the cutout [28], i.e., what Foote argues must be the claimed seal groove. Reply Br. 5 (emphasis in Brief).

Footo's arguments are unpersuasive. Footo does not direct us to objective evidence which demonstrates that one with ordinary skill in the art would not consider that portion immediately above Walker's thread relief [30] as corresponding to the claimed peripheral seal groove (i.e., without cutout [28]). Moreover, Footo does not explain why the space immediately above thread relief [30] alone cannot correspond to the claimed peripheral seal groove. Walker's backup ring [42], while located within cutout [28] and around the structure corresponding to a portion of the claimed stopper portion (i.e., threaded portion [14], thread relief [30], and cutout [28] comprising smooth curve [32], frusto-conical portion [34] and semi-toroidal portion [38]) is also positioned between Walker's thread relief [30], (i.e., the peripheral seal groove) and the face [20] (i.e., planar surface) and thus meets the disputed limitation. The Examiner's findings in this respect are reasonable and Footo has not shown otherwise.

Claim 1 further recites (disputed limitations in *italics*): "a backing ring . . . , *the peripheral seal is extruded in an axial direction against the backing ring . . .*." App. Br. Claim App'x. 14.

Footo argues that its backing ring is structurally defined to resist expansion of the peripheral seal in an axial direction. App. Br. 10. Footo argues that Walker's backup ring [42] is retained in cutout [28] and resists an expansion of O-ring [24] in a radial direction. The language of claim 1 does not require the backing ring to resist expansion of the peripheral seal in an axial direction. Thus, the quoted claim language encompasses Walker's backing ring structure. .

Foote sets forth a similar argument as the one above. That argument is best understood by referring to Walker's figures 2 and 3, reproduced below.

Walker's figure 2 is below:

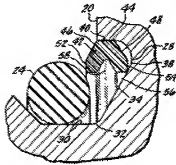


Figure 2 depicts a fitting and seal assembly.

Walker's figure 3A is below:

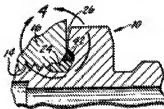


Figure 3A depicts the deformed seal assembly.

Foote argues that although it agrees that Walker describes that the peripheral seal (O-ring [24]) is extruded in an axial direction (e.g., along axis formed by [30]), that because the peripheral seal (O-ring [24]) is also extruded in a radial direction (e.g., along the cut out portion [34] and [28], for example), and that the radial extrusion is what is against the backing ring (backup ring [42]), Walker does not anticipate claim 1. Reply Br. 5. Foote's argument is misplaced. Claim 1 does not foreclose the peripheral seal from being extruded in multiple directions. Moreover, Foote has not sufficiently demonstrated that what Foote characterizes as Walker's

extrusion “radially” is not extrusion in an “axial direction.” Since Walker describes that the O-ring [24] is extruded in one axial direction (the axis formed along [30] of figure 2) and then is extruded in an axial direction (along the axis formed by the straight wall of portion [34] of figure 2) the disputed limitation is met. Walker, Col. 3, ll. 46-50; Figs. 2 and 3A. Foote has not sufficiently demonstrated otherwise.

For all these reasons, Foot has not shown that the Examiner erred in finding claim 1 anticipated by Walker.

Anticipation by Williamson

The Examiner alternatively rejected claim 1 as anticipated by Williamson. Since we sustain the rejection of claim 1 on other grounds we do not reach the merits of the rejection of claim 1 over Williamson.

F. CONCLUSION

Foote has not shown that the Examiner incorrectly found that Walker describes (1) a closure with a planar surface from which projects an axially projecting stopper portion that fits closely within an opening; (2) a backing ring positioned in close fitting relation around the projecting stopper portion between a peripheral seal groove and the planar surface; and (3) a peripheral seal extruded in an axial direction against the backing ring.

G. ORDER

The decision of the Examiner rejecting claim 1 under 35 U.S.C. § 102(b) as anticipated by Walker is affirmed.

We do not reach the merits of the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Williamson.

No time period for taking any subsequent action in connection with the appeal may be extended under 37 C.F.R. § 1.136(a).

Appeal 2009-003201  
Application 10/723,846

AFFIRMED

rvb

cc:

CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC  
1420 FIFTH AVENUE  
SUITE 2800  
SEATTLE, WA 98101-2347